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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST 5046. The Department of Ecology (Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the state of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law [Revised Code of Washington (RCW) 90.48.080 and 90.48.162] requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the state include procedures for issuing permits [Chapter 173-216 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Southwest Regional Office of the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments.

GENERAL INFORMATION				
Applicant	Grays Harbor Public Development Authority			
Facility Name and Address	Satsop Development Park Sewage Treatment Plant 100 Lambert Road Elma, WA 98541			
Type of Treatment System	Activated Sludge			
Discharge Location	Latitude: 46° 58' 19" N Longitude: 123° 27' 20" W.			
Legal Description of Application Area	Section 8, township 17N, range 6W Latitude: 46° 58' 19" N. Longitude: 123° 27' 20" W.			
Contact at Facility	Laura Schinnell, Energy Northwest Project Scientist (360) 482-1586			
Responsible Official	Laura Schinnell Satsop Development Park/Grays Harbor Public Development Authority 50 Enterprise Lane, Suite 101 Elma, WA 98541 Phone: (360) 482-4362 FAX # (360) 482-4376			

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

HISTORY

In 1977 the Washington Public Power Supply Sytem (WPPSS) proposed a wastewater collection and treatment system to serve WPPSS Nuclear Projects Nos. 3 and 5 Site near Satsop, Washington. The project was planned to sewer construction offices, warehouses, and satellite washrooms associated with the construction of the Satsop Nuclear Power Plant as well as the rest of the wastewater needs of the Satsop Site. The proposal was approved by the Energy Facility Siting Council and the Department in 1988. A 50,000 gpd Clow Package activated sludge plant and four septic tanks with a total capacity of 4700 gpd were constructed to serve the Satsop site. The treatment facility discharged to a drainfield with a 50,000 gpd capacity.

Because the Satsop Nuclear Power Plant did not get constructed so projected flows and loadings were never realized, the activated sludge portion of the treatment system was placed in Standby service in 1988. Only the septic tank portion of the facility has been used since.

Recently the ownership of the Satsop Nuclear Site and facilities was transferred from the Washington Public Power Supply System to the Satsop Redevelopment Project (SRP). SRP transferred control of the Satsop site to the Grays Harbor Public Development Authority (PDA). The PDA is compromised of a commissioner from Grays Harbor County, the Port of Grays Harbor, and the Grays Harbor Public Utility District; and four representatives from the general public. The intent of PDA is to develop the site and existing facilities and infrastructure into a business park. The development will necessitate using the Clow package plant. The plant was refurbished in 2000 and brought back on line.

Because of the transfer of ownership and change in permitting authority, the Satsop wastewater facility needs to be permitted by the Department under their state waste discharge permitting authority. The Satsop wastewater facilities are currently permitted by an existing permit through the Washington State Energy Facility Site Evaluation Council.

COLLECTION SYSTEM STATUS

The collection system is about 20 years old. It has seven lift stations, five of which have not been in service. The system will be expanded to meet the needs of the new development.

TREATMENT PROCESSES

The treatment plant consists of a 50,000 gpd Clow package extended aeration activated sludge system. The plant, like the collection system is about 20 years old. The plant has been mothballed since about 1998 because of lack of activity at the Satsop site. Only the 4700 gpd septic tanks have been used in recent times. The Clow plant has been recently renovated with the intention of using it to handle the new flows from proposed business development at the site. Although flow from the septic tank did not present a water quality threat, the septic system will probably be bypassed when the activated sludge plant is operating.

DISTRIBUTION SYSTEM

The distribution system to ground consists of three drainfields with 27, 100-foot perforated pipe laterals imbedded in them. Each lateral has a vent riser at the end of the pipe. The drainfields in a sequential

fashion by pumps in the central dosing chamber which distribute the flow to the distribution boxes at each of the three drainfields.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and at the secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. Solids removed from the secondary clarifier are treated (aerobically digested) and taken by a sanitary waste hauler to either Aberdeen, Hoquiam, or Elma.

GROUND WATER

The groundwater quality in the Chehalis River Basin is fairly good quality. Typical values for nitrates range from non-detect to 3.5 mg/L, well below the criteria level. The higher values were found in wells at depths of 76 feet and 10 feet. The makeup water well near the Satsop site had a high nitrate value of 0.68 mg/L.

The predominant surface soil types at the Satsop site are fairly permeable and move the shallow groundwater rapidly off the site. The groundwater provides plenty of dilution for the drainfield underflow. No problems with groundwater quality were anticipated as a result of the treated wastewater discharge to ground.

PERMIT STATUS

The previous permit for this facility [National Pollutant Discharge Elimination System (NPDES) Permit No. WA0024961] was issued by the Washington Public Power Supply System.

An application for permit renewal was submitted to the Department on April 12, 2000, and accepted by the Department on August 15, 2000.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection in August 2001.

During the history of the previous permit, the Permittee was not required by the Energy Facility Sitting Council to submit Discharge Monitoring Reports (DMRs) and other reports. Very few records exist documenting the performance of the Satsop wastewater facilities.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in one discharge monitoring report. The values below really don't reflect the capability of the plant to treat the wastewater because it is from only one DMR. No other data was available. The proposed wastewater discharge prior to infiltration or land application is characterized for the following parameters:

Table 1: Wastewater Characterization

<u>Parameter</u>	<u>Concentration</u>	
BOD_5	34.9 mg/L	
TSS	60.6 mg/L	
pH	5.27 Standard Units	
Dissolved Oxygen	2.8 mg/L	

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology-or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water Reclamation and Reuse Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the wastewater applied to the drainfield that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). The following permit limitations are necessary to satisfy the requirement for AKART:

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L

Nitrate	10 mg/L	
pH	6.5 to 8.5 standard units	
Manganese	0.05 mg/L	
Total Iron	0.3 mg/L	
Toxics	No toxics in toxic amounts	

Pollutant concentrations in the proposed discharge do not exceed ground water quality criteria with technology-based controls, which the Department has determined to be AKART. No limit based on ground water criteria is necessary at the end of treatment.

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED WA0024961

Table 3: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits
BOD ₅	No limits existed for	30 mg/l monthly avg.
	the wastewater plants under the EFSEC Permit	85% removal (monthly avg.)
		45 mg/l weekly avg.
TSS		30 mg/l monthly avg.
		85% removal (monthly avg.)
		45 mg/l weekly avg.
pH		6 – 9

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2 and S3. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the permit application prepared by Laura Schinnell, Project Scientist of Energy Northwest, and are as follows:

Design Population 5000

Monthly average flow (max. month):

0.050 mgd

BOD influent loading:

120 lbs/day

TSS influent loading:

200 lbs/day

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85 percent of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

OPERATIONS AND MAINTENANCE

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit Condition S6 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and state Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the local health district.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will by used by the Department to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility.

Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the state of Washington. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

- Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. <u>Field Techniques for Measuring</u> Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.
- Washington State Department of Ecology, 1993. <u>Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems</u>, Ecology Publication # 93-36. 20 pp.
- Washington State Department of Ecology and Department of Health, 1997. <u>Water Reclamation and Reuse Standards</u>, Ecology Publication # 97-23. 73 pp.
- Washington State Department of Ecology, 1996. <u>Implementation Guidance for the Ground Water Quality Standards</u>, Ecology Publication # 96-02.
- Washington State University, November, 1981. Laboratory Procedures Soil Testing Laboratory. 38 pp.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on November 21, 2001, and November 28, 2001, in the *Aberdeen Daily World* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on March 28, 2002, in the *Aberdeen Daily World* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator Department of Ecology Southwest Regional Office P.O. Box 47775 Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6279, or by writing to the address listed above.

This permit was written by Al Bolinger, SWRO.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)—The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist—An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

APPENDIX D--RESPONSE TO COMMENTS